

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in this Application:

Listing of Claims:

1. (Currently amended) A vertical heat exchanger comprising:
a pair of a first fluid passing ports for flowing of a first fluid through a tube;
a pair of a second fluid passing ports for flowing of a second fluid through a shell;
and

a vent pipe for venting a gas, at least part of one end of the vent pipe ~~which~~ being made of an upper tube sheet part and the other end ~~of which~~ being connected outside the heat exchanger to an immediately adjacent second fluid passing port passing the same fluid as the vent pipe, whereby the fluid flowing through the vent pipe drives out the gas.

2. – 4. (Canceled).

5. (Currently amended) A heat exchanger according to claim 1, wherein the heat exchanger is a member selected from the group consisting of a shell-and-tube heat exchanger and a spiral heat exchanger, wherein the upper tube sheet corresponds to an upper cover in the case of a spiral heat exchanger ~~and the lower tube sheet corresponds to a lower cover in the case of the spiral heat exchanger~~.

6. – 17. (Canceled).

18. (Currently amended) A vertical heat exchanger for cooling a fluid comprising:

a pair of a first fluid passing ports for flowing of a first fluid through a tube;
a pair of a second fluid passing ports for flowing of a second fluid through a shell;
and

a drain pipe at least part of one end of which being made of a lower tube sheet part and reaching the interior of the shell and the other end of which connected outside the heat exchanger to an immediately adjacent second fluid passing port passing the same fluid as the drain pipe; and

a vent pipe for venting a gas, at least part of one end of the vent pipe being made of an upper tube sheet part and the other end being connected outside the heat exchanger

to an immediately adjacent second fluid passing port passing the same fluid as the vent pipe, whereby the fluid flowing through the vent pipe drives out the gas.

19. (Cancelled).

20. – 24. (Canceled).

25. (New) A vertical heat exchanger according to claim 18, wherein the connection of the vent pipe with the shell side second fluid passing port is further connected to a pipeline and is loaded with a back pressure on the connected pipeline, the pipeline comprising a nozzle, whereby the gas accumulated in the upper part of the shell is expelled through the nozzle in the pipeline.

26. (New) A vertical heat exchanger according to claim 18, wherein the first fluid comprising an easily polymerizable substance is passed through the first fluid passing port of the heat exchanger and low temperature fluid is introduced to the shell side second fluid passing port as coolant.

27. (New) A vertical heat exchanger according to claim 18, wherein the fluid flowing through the shell is introduced or discharged through the drain pipe instead of through the second fluid passing port, and wherein the fluid in the lower part of the heat exchanger is stirred as it is fluidized.

28. (New) The use of the vertical heat exchanger according to claim 18 for heat exchange of an easily polymerizable fluid.

29. (New) The use of the vertical heat exchanger according to claim 28 wherein the easily polymerizable fluid is (meth)acrylic acid or an ester thereof and an aqueous solution of the methacrylic acid or the ester thereof.